

**Set Name Query**

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*DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ*

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<u>L18</u>	diclofop or fenoxaprop or prochloraz or deltamethrin	2904	<u>L18</u>
<u>L17</u>	desmedipham or phenmedipham or ethofumesate	976	<u>L17</u>
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<u>L4</u>	alkanol\$1 or diol\$1 or polyol\$1	222181	<u>L4</u>
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<u>L2</u>	phenol\$1 or phenyl or alkylphenol\$1 or polyalkylphenol\$1 or polyarylphenol\$1	608777	<u>L2</u>
<u>L1</u>	alkoxy\$5 or ethoxy\$5 or propoxy\$5 or oxyalkyl\$5 or oxyethyl\$5 or oxypropyl\$5 or polyalkoxy\$5 or polyethoxy\$5 or polypropoxy\$5 or polyoxyalkyl\$5 or polyoxyethyl\$5 or polyoxypropyl\$5 or EO or po	572581	<u>L1</u>

END OF SEARCH HISTORY

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**Search Results - Record(s) 1 through 5 of 5 returned.**☐ 1. Document ID: US 20030114331 A1

L11: Entry 1 of 5

File: PGPB

Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114331

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030114331 A1

TITLE: Compositions for treating shoes and methods and articles employing same

PUBLICATION-DATE: June 19, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baker, Keith Homer	Cincinnati	OH	US	
Siklosi, Michael Peter	Cincinnati	OH	US	
Na, Henry Cheng	Cincinnati	OH	US	
Strang, Janine Morgens	Cincinnati	OH	US	
Scheper, William Michael	Lawrenceburg	IN	US	
Sadlowski, Eugene Steven	Cincinnati	OH	US	
Becks, Vincent John	Liberty Township	OH	US	

US-CL-CURRENT: 510/276; 510/426, 510/475

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC
Drawn Desc	Image										

☐ 2. Document ID: US 20020119907 A1

L11: Entry 2 of 5

File: PGPB

Aug 29, 2002

PGPUB-DOCUMENT-NUMBER: 20020119907

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020119907 A1

TITLE: Compositions for treating shoes and methods and articles employing same

PUBLICATION-DATE: August 29, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baker, Keith Homer	Cincinnati	OH	US	
Siklosi, Michael Peter	Cincinnati	OH	US	
Na, Henry Cheng	Cincinnati	OH	US	
Strang, Janine Morgens	Cincinnati	OH	US	
Haeggberg, Donna Jean	Cincinnati	OH	US	
Scheper, William Michael	Lawrenceburg	IN	US	
Sheets, Connie Lynn	Cincinnati	OH	US	
Tollens, Fernando Ray	Indian Hill	OH	US	
Murray, Michael Glen	South Lebanon	OH	US	
Creedon, Michael Timothy	Cincinnati	OH	US	
Wahl, Errol Hoffman	Cincinnati	OH	US	
Trinh, Toan	Maineville	OH	US	
Sadlowski, Eugene Steven	Cincinnati	OH	US	
Becks, Vincent John	Liberty Township	OH	US	

US-CL-CURRENT: 510/475; 510/476

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☒ 3. Document ID: US 20020082188 A1

L11: Entry 3 of 5

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020082188

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020082188 A1

TITLE: Compositions for treating shoes and methods and articles employing same

PUBLICATION-DATE: June 27, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baker, Keith Homer	Cincinnati	OH	US	
Siklosi, Michael Peter	Cincinnati	OH	US	
Na, Henry Cheng	Cincinnati	OH	US	
Strang, Janine Morgens	Cincinnati	OH	US	
Haeggberg, Donna Jean	Cincinnati	OH	US	
Scheper, William Michael	Lawrenceburg	IN	US	
Sheets, Connie Lynn	Cincinnati	OH	US	
Tollens, Fernando Ray	Indian Hill	OH	US	
Murray, Michael Glen	South Lebanon	OH	US	
Creedon, Michael Timothy	Cincinnati	OH	US	
Wahl, Errol Hoffman	Cincinnati	OH	US	
Trinh, Toan	Maineville	OH	US	
Sadlowski, Eugene Steven	Cincinnati	OH	US	
Becks, Vincent John	Township	OH	US	

US-CL-CURRENT: 510/475; 510/476, 510/477

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☒ 4. Document ID: US 20010041665 A1

L11: Entry 4 of 5

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041665

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010041665 A1

TITLE: Pathogen-reducing systems, compositions, articles and methods employing ozone

PUBLICATION-DATE: November 15, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Severns, John Cort	West Chester	OH	US	
Hartman, Frederick Anthony	Cincinnati	OH	US	
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Frazee, Michael Charles	Cincinnati	OH	US	

US-CL-CURRENT: 510/218; 510/505

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☒ 5. Document ID: US 6503876 B1

L11: Entry 5 of 5

File: USPT

Jan 7, 2003

US-PAT-NO: 6503876

DOCUMENT-IDENTIFIER: US 6503876 B1

TITLE: Stable non-aqueous liquid laundry detergents comprising low density particles

DATE-ISSUED: January 7, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Broeckx, Walter August Maria	Zeel			BE

US-CL-CURRENT: 510/349; 510/302, 510/303, 510/304, 510/320, 510/321, 510/336,  
510/337, 510/338, 510/438, 510/445, 510/449

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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L11: Entry 3 of 5

File: PGPB

Jun 27, 2002

DOCUMENT-IDENTIFIER: US 20020082188 A1

TITLE: Compositions for treating shoes and methods and articles employing same

Detail Description Paragraph (125):

[0180] Nonlimiting examples of surfactants useful herein include the conventional C.sub.8-C.sub.18 alkyl ethoxylates ("AE"), with EO about 1-22, including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), alkyl dialkyl amine oxide, alkanoyl glucose amide, C.sub.11-C.sub.18 alkyl benzene sulfonates and primary, secondary and random alkyl sulfates, the C.sub.10-C.sub.18 alkyl alkoxy sulfates, the C.sub.10-C.sub.18 alkyl polyglycosides and their corresponding sulfated polyglycosides, C.sub.12-C.sub.18 alpha-sulfonated fatty acid esters, C.sub.12-C.sub.18 alkyl and alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), C.sub.12-C.sub.18 betaines and sulfobetaines ("sultaines"), C.sub.10-C.sub.18 amine oxides, and the like. Other conventional useful surfactants are listed in standard texts.

Detail Description Paragraph (127):

[0182] Suitable nonionic surfactants are generally disclosed in U.S. Pat. No. 3,929,678, Laughlin et al., issued December 30, 1975, and U.S. Patent No. 4,285,841, Barrat et al, issued Aug. 25, 1981. Exemplary, non-limiting classes of useful nonionic surfactants include: C.sub.8-C.sub.18 alkyl ethoxylates ("AE"), with EO about 1-22, including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), alkyl dialkyl amine oxide, alkanoyl glucose amide, and mixtures thereof.

Detail Description Paragraph (130):

[0185] Preferred nonionic surfactants include, but are not limited to, the ethoxylated alcohols and ethoxylated alkyl phenols of the formula  $R(OC.sub.2H.sub.4).sub.nOH$ , wherein R is selected from the group consisting of aliphatic hydrocarbon radicals containing from about 8 to about 15 carbon atoms and alkyl phenyl radicals in which the alkyl groups contain from about 8 to about 12 carbon atoms, and the average value of n is from about 5 to about 15. These surfactants are more fully described in U.S. Pat. No. 4,284,532, Leikhim et al, issued Aug. 18, 1981. Particularly preferred are ethoxylated alcohols having an average of from about 9 to about 15 carbon atoms in the alcohol and an average degree of ethoxylation of from about 5 to about 15 moles of ethylene oxide per mole of alcohol.

Detail Description Paragraph (132):

[0187] The polyethylene, polypropylene, and polybutylene oxide condensates of alkyl phenols. In general, the polyethylene oxide condensates are preferred. These compounds include the condensation products of alkyl phenols having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with the alkylene oxide. In a preferred embodiment, the ethylene oxide is present in an amount equal to from about 5 to about 25 moles of ethylene oxide per mole of alkyl phenol. Commercially available nonionic surfactants of this type include Igepal.RTM. CO-630, marketed by the GAF Corporation; and Triton.RTM. X-45, X-114, X-100, and X-102; all marketed by the Rohm & Haas Company. These compounds are commonly referred to as alkyl phenol alkoxyates, (e.g., alkyl phenol ethoxylates).

Detail Description Paragraph (200):

[0247] Ampholytic surfactants can be incorporated into the treating compositions hereof. These surfactants can be broadly described as aliphatic derivatives of secondary or tertiary amines, or aliphatic derivatives of heterocyclic secondary and tertiary amines in which the aliphatic radical can be straight chain or branched. One of the aliphatic substituents contains at least about 8 carbon atoms, typically from about 8 to about 18 carbon atoms, and at least one contains an anionic water-solubilizing group, e.g., carboxy, sulfonate, sulfate. See U.S. Pat. No. 3,929,678 to Laughlin et al., issued Dec. 30, 1975 at column 19, lines 18-35 for examples of ampholytic surfactants. Preferred amphoteric include C.sub.12-C.sub.18 alkyl ethoxylates ("AE") including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), C.sub.12-C.sub.18 betaines and sulfobetaines ("sultaines"), C.sub.10-C.sub.18 amine oxides, and mixtures thereof.

Detail Description Paragraph (216):

[0262] WO97/39091 A published Oct. 23, 1997 includes disclosure of a detergent surfactant composition comprising at least 0.5 (especially 5, more especially 10, most especially 20) wt % of longer alkyl chain, MCB surfactant of formula (I). A-X-B (I) wherein A is a 9-22 (especially 12-18) C MCB alkyl hydrophobe having: (i) a longest linear C chain attached to the X-B moiety of 8-21 C atoms; (ii) 1-3C alkyl moiety(s) branching from this longest linear chain; (iii) at least one of the branching alkyl moieties attached directly to a C of the longest linear C chain at a position within the range of position 2 C, counting from C 1 which is attached to the CH.sub.2B moiety, to the omega-2 carbon (the terminal C minus 2C); and (iv) the surfactant composition has an average total number of C atoms in the A-X moiety of 14.5-17.5 (especially 15-17); and B is a hydrophilic (surfactant head-group) moiety preferably selected from sulfates, sulfonates, polyoxyalkylene (especially polyoxyethylene or polyoxypropylene), alkoxylated sulphates, polyhydroxy moieties, phosphate esters, glycerol sulphonates, polygluconates, polyphosphate esters, phosphonates, sulphosuccinates, sulphosuccinates, polyalkoxylated carboxylates, glucamides, taurinates, sarcosinates, glycinate, isethionates, mono-/di-alkanol-amides, monoalkanolamide sulphates, diglycol-amide and their sulphates, glyceryl esters and their sulphates, glycerol ethers and their sulphates, polyglycerol ether and their sulphates, sorbitan esters, polyalkoxylated sorbitan esters, ammonio-alkane-sulphonates, amidopropyl betaines, alkylated quat., alkylated/poly-hydroxyalkylated (oxypropyl) quat., imidazolines, 2-yl succinates, sulphonated alkyl esters and sulphonated fatty acids; and X-- is --CH.sub.2-- or --C(O)--. WO97/39091 A also discloses a laundry detergent or other cleaning composition comprising: (a) 0.001-99% of detergent surfactant (I); and (b) 1-99.999% of adjunct ingredients.

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L11: Entry 4 of 5

File: PGPB

Nov 15, 2001

DOCUMENT-IDENTIFIER: US 20010041665 A1

TITLE: Pathogen-reducing systems, compositions, articles and methods employing ozone

Summary of Invention Paragraph (69):

[0058] Nonlimiting examples of surfactants useful herein include the conventional C.sub.8-C.sub.18 alkyl ethoxylates ("AE"), with EO about 1-22, including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), alkyl dialkyl amine oxide, alkanoyl glucose amide, C.sub.11-C.sub.18 alkyl benzene sulfonates and primary, secondary and random alkyl sulfates, the C.sub.10-C.sub.18 alkyl alkoxy sulfates, the C.sub.10-C.sub.18 alkyl polyglycosides and their corresponding sulfated polyglycosides, C.sub.12-C.sub.18 alpha-sulfonated fatty acid esters, C.sub.12-C.sub.18 alkyl and alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), C.sub.12-C.sub.18 betaines and sulfobetaines ("sultaines"), C.sub.10-C.sub.18 amine oxides, and the like. Other conventional useful surfactants are listed in standard texts.

Summary of Invention Paragraph (71):

[0059] Suitable nonionic surfactants are generally disclosed in U.S. Pat. No. 3,929,678, Laughlin et al., issued Dec. 30, 1975, and U.S. Pat. No. 4,285,841, Barrat et al, issued Aug. 25, 1981. Exemplary, non-limiting classes of useful nonionic surfactants include: C.sub.8-C.sub.18 alkyl ethoxylates ("AE"), with EO about 1-22, including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxyates (especially ethoxylates and mixed ethoxy/propoxy), alkyl dialkyl amine oxide, alkanoyl glucose amide, and mixtures thereof.

Summary of Invention Paragraph (74):

[0062] Preferred nonionic surfactants include, but are not limited to, the ethoxylated alcohols and ethoxylated alkyl phenols of the formula  $R(OC.sub.2H.sub.4).sub.nOH$ , wherein R is selected from the group consisting of aliphatic hydrocarbon radicals containing from about 8 to about 15 carbon atoms and alkyl phenyl radicals in which the alkyl groups contain from about 8 to about 12 carbon atoms, and the average value of n is from about 5 to about 15. These surfactants are more fully described in U.S. Pat. No. 4,284,532, Leikhim et al, issued Aug. 18, 1981. Particularly preferred are ethoxylated alcohols having an average of from about 9 to about 15 carbon atoms in the alcohol and an average degree of ethoxylation of from about 5 to about 15 moles of ethylene oxide per mole of alcohol.

Summary of Invention Paragraph (76):

[0064] The polyethylene, polypropylene, and polybutylene oxide condensates of alkyl phenols. In general, the polyethylene oxide condensates are preferred. These compounds include the condensation products of alkyl phenols having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with the alkylene oxide. In a preferred embodiment, the ethylene oxide is present in an amount equal to from about 5 to about 25 moles of ethylene oxide per mole of alkyl phenol. Commercially available nonionic surfactants of this type include Igepal.RTM. CO-630, marketed by the GAF Corporation; and Triton.RTM. X-45, X-114, X-100, and X-102, all marketed by the Rohm & Haas Company. These compounds are commonly referred to as alkyl phenol alkoxyates, (e.g., alkyl phenol ethoxylates).

Summary of Invention Paragraph (149):

[0123] Amphoteric surfactants can be incorporated into the treating compositions hereof. These surfactants can be broadly described as aliphatic derivatives of secondary or tertiary amines, or aliphatic derivatives of heterocyclic secondary and tertiary amines in which the aliphatic radical can be straight chain or branched. One of the aliphatic substituents contains at least about 8 carbon atoms, typically from about 8 to about 18 carbon atoms, and at least one contains an anionic water-solubilizing group, e.g., carboxy, sulfonate, sulfate. See U.S. Pat. No. 3,929,678 to Laughlin et al., issued Dec. 30, 1975 at column 19, lines 18-35 for examples of amphoteric surfactants. Preferred amphoteric include C.sub.12-C.sub.18 alkyl ethoxylates ("AE") including the so-called narrow peaked alkyl ethoxylates and C.sub.6-C.sub.12 alkyl phenol alkoxylates (especially ethoxylates and mixed ethoxy/propoxy), C.sub.12-C.sub.18 betaines and sulfobetaines ("sultaines"), C.sub.10-C.sub.18 amine oxides, and mixtures thereof.

Summary of Invention Paragraph (183):

[0153] WO97/39091 A published Oct. 23, 1997 includes disclosure of a detergent surfactant composition comprising at least 0.5 (especially 5, more especially 10, most especially 20) wt % of longer alkyl chain, MCB surfactant of formula (I). A-X-B (I) wherein A is a 9-22 (especially 12-18) C MCB alkyl hydrophobe having: (i) a longest linear C chain attached to the X-B moiety of 8-21C atoms; (ii) 1-3C alkyl moiety(s) branching from this longest linear chain; (iii) at least one of the branching alkyl moieties attached directly to a C of the longest linear C chain at a position within the range of position 2 C, counting from C 1 which is attached to the CH.sub.2B moiety, to the omega-2 carbon (the terminal C minus 2C.); and (iv) the surfactant composition has an average total number of C atoms in the A-X moiety of 14.5-17.5 (especially 15-17); and B is a hydrophilic (surfactant head-group) moiety preferably selected from sulfates, sulfonates, polyoxyalkylene (especially polyoxyethylene or polyoxypropylene), alkoxylated sulphates, polyhydroxy moieties, phosphate esters, glycerol sulphonates, polygluconates, polyphosphate esters, phosphonates, sulphosuccinates, sulphosuccinates, polyalkoxylated carboxylates, glucamides, taurines, sarcosines, glycines, isethionates, mono-/di-alkanol-amides, monoalkanolamide sulphates, diglycol-amide and their sulphates, glyceryl esters and their sulphates, glycerol ethers and their sulphates, polyglycerol ether and their sulphates, sorbitan esters, polyalkoxylated sorbitan esters, ammonio-alkane-sulphonates, amidopropyl betaines, alkylated quat., alkylated/poly-hydroxyalkylated (oxypropyl) quat., imidazolines, 2-yl succinates, sulphonated alkyl esters and sulphonated fatty acids; and X--is --CH.sub.2-- or --C(O)--. WO97/39091 A also discloses a laundry detergent or other cleaning composition comprising: (a) 0.001-99% of detergent surfactant (I); and (b) 1-99.999% of adjunct ingredients.



**WEST****End of Result Set**☐ **Generate Collection** **Print**

L11: Entry 5 of 5

File: USPT

Jan 7, 2003

DOCUMENT-IDENTIFIER: US 6503876 B1

TITLE: Stable non-aqueous liquid laundry detergents comprising low density particles

Brief Summary Text (143):

Conventional nonionic and amphoteric surfactants include C.sub.12 -C.sub.18 alkyl ethoxylates (AE) including the so-called narrow peaked alkyl ethoxylates and C.sub.6 -C.sub.12 alkyl phenol alkoxylates (especially ethoxylates and mixed ethoxy/propoxy). The C.sub.10 -C.sub.18 N-alkyl polyhydroxy fatty acid amides can also be used. Typical examples include the C.sub.12 -C.sub.18 N-methylglucamides. See WO 9,206,154. Other sugar-derived surfactants include the N-alkoxy polyhydroxy fatty acid amides, such as C.sub.10 -C.sub.18 N-(3-methoxypropyl) glucamide. The N-propyl through N-hexyl C.sub.12 -C.sub.18 glucamides can be used for low sudsing. C.sub.10 -C.sub.20 conventional soaps may also be used. If high sudsing is desired, the branched-chain C.sub.10 -C.sub.16 soaps may be used. Examples of nonionic surfactants are described in U.S. Pat. No. 4,285,841, Barrat et al, issued Aug. 25, 1981.

Brief Summary Text (144):

Preferred examples of these surfactants include ethoxylated alcohols and ethoxylated alkyl phenols of the formula R(OC.sub.2 H.sub.4).sub.n OH, wherein R is selected from the group consisting of aliphatic hydrocarbon radicals containing from about 8 to about 15 carbon atoms and alkyl phenyl radicals in which the alkyl groups contain from about 8 to about 12 carbon atoms, and the average value of n is from about 5 to about 15. These surfactants are more fully described in U.S. Pat. No. 4,284,532, Leikhim et al, issued Aug. 18, 1981. Particularly preferred are ethoxylated alcohols having an average of from about 10 to about 15 carbon atoms in the alcohol and an average degree of ethoxylation of from about 6 to about 12 moles of ethylene oxide per mole of alcohol. Mixtures of anionic and nonionic surfactants are especially useful.

Brief Summary Text (215):

Nonionic Detergent Surfactants--Suitable nonionic detergent surfactants are generally disclosed in U.S. Pat. No. 3,929,678, Laughlin et al., issued Dec. 30, 1975, and U.S. Pat. No. 4,285,841, Barrat et al, issued Aug. 25, 1981. Exemplary, non-limiting classes of useful nonionic surfactants include: C.sub.8 -C.sub.18 alkyl ethoxylates ("AE"), with EO about 1-22, including the so-called narrow peaked alkyl ethoxylates and C.sub.6 -C.sub.12 alkyl phenol alkoxylates (especially ethoxylates and mixed ethoxy/propoxy), alkyl dialkyl amine oxide, alkanoyl glucose amide, and mixtures thereof.

Brief Summary Text (216):

If nonionic surfactants are used, the compositions of the present invention will preferably contain up to about 10%, preferably from 0% to about 5%, more preferably from 0% to about 3%, by weight of a nonionic surfactant. Preferred are the ethoxylated alcohols and ethoxylated alkyl phenols of the formula R(OC.sub.2 H.sub.4).sub.n OH, wherein R is selected from the group consisting of aliphatic hydrocarbon radicals containing from about 8 to about 15 carbon atoms and alkyl phenyl radicals in which the alkyl groups contain from about 8 to about 12 carbon atoms, and the average value of n is from about 5 to about 15. These surfactants are more fully described in U.S. Pat. No. 4,284,532, Leikhim et al, issued Aug. 18, 1981. Particularly preferred are ethoxylated alcohols having an average of from

about 10 to about 15 carbon atoms in the alcohol and an average degree of ethoxylation of from about 6 to about 12 moles of ethylene oxide per mole of alcohol.

Brief Summary Text (218):

The polyethylene, polypropylene, and polybutylene oxide condensates of alkyl phenols. In general, the polyethylene oxide condensates are preferred. These compounds include the condensation products of alkyl phenols having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with the alkylene oxide. In a preferred embodiment, the ethylene oxide is present in an amount equal to from about 5 to about 25 moles of ethylene oxide per mole of alkyl phenol. Commercially available nonionic surfactants of this type include Igepal.RTM. CO-630, marketed by the GAF Corporation; and Triton.RTM. X-45, X-114, X-100, and X-102, all marketed by the Rohm & Haas Company. These compounds are commonly referred to as alkyl phenol alkoxyates, (e.g., alkyl phenol ethoxyates).

Brief Summary Text (234):

Ampholytic surfactants can be incorporated into the detergent compositions hereof. These surfactants can be broadly described as aliphatic derivatives of secondary or tertiary amines, or aliphatic derivatives of heterocyclic secondary and tertiary amines in which the aliphatic radical can be straight chain or branched. One of the aliphatic substituents contains at least about 8 carbon atoms, typically from about 8 to about 18 carbon atoms, and at least one contains an anionic water-solubilizing group, e.g., carboxy, sulfonate, sulfate. See U.S. Pat. No. 3,929,678 to Laughlin et al., issued Dec. 30, 1975 at column 19, lines 18-35 for examples of ampholytic surfactants. Preferred amphoteric include C.sub.12 -C.sub.18 alkyl ethoxyates ("AE") including the so-called narrow peaked alkyl ethoxyates and C.sub.6 -C.sub.12 alkyl phenol alkoxyates (especially ethoxyates and mixed ethoxy/propoxy), C.sub.12 -C.sub.18 betaines and sulfobetaines ("sultaines"), C.sub.10 -C.sub.18 amine oxides, and mixtures thereof.

Brief Summary Text (252):

WO97/39091 A published Oct. 23, 1997 includes disclosure of a detergent surfactant composition comprising at least 0.5 (especially 5, more especially 10, most especially 20) wt % of longer alkyl chain, MCB surfactant of formula (I). A-X-B (I) wherein A is a 9-22 (especially 12-18) C MCB alkyl hydrophobe having: (i) a longest linear C chain attached to the X-B moiety of 8-21C atoms; (ii) 1-3C alkyl moiety(s) branching from this longest linear chain; (iii) at least one of the branching alkyl moieties attached directly to a C of the longest linear C chain at a position within the range of position 2 C, counting from C 1 which is attached to the CH.sub.2 B moiety, to the omega-2 carbon (the terminal C minus 2C); and (iv) the surfactant composition has an average total number of C atoms in the A-X moiety of 14.5-17.5 (especially 15-17); and B is a hydrophilic (surfactant head-group) moiety preferably selected from sulfates, sulfonates, polyoxyalkylene (especially polyoxyethylene or polyoxypropylene), alkoxyated sulphates, polyhydroxy moieties, phosphate esters, glycerol sulphonates, polygluconates, polyphosphate esters, phosphonates, sulphosuccinates, sulphosuccinates, polyalkoxyated carboxylates, glucamides, taurates, sarcosinates, glycinates, isethionates, mono-/di-alkanol-amides, monoalkanolamide sulphates, diglycol-amide and their sulphates, glyceryl esters and their sulphates, glycerol ethers and their sulphates, polyglycerol ether and their sulphates, sorbitan esters, polyalkoxyated sorbitan esters, ammonio-alkane-sulphonates, amidopropyl betaines, alkylated quat., alkylated/poly-hydroxyalkylated (oxypropyl) quat., imidazolines, 2-yl succinates, sulphonated alkyl esters and sulphonated fatty acids; and X-- is --CH.sub.2 -- or --C(O)--. WO97/39091 A also discloses a laundry detergent or other cleaning composition comprising: (a) 0.001-99% of detergent surfactant (I); and (b) 1-99.999% of adjunct ingredients.



☐ 3. Document ID: US 6399782 B1

L14: Entry 3 of 9

File: USPT

Jun 4, 2002

US-PAT-NO: 6399782

DOCUMENT-IDENTIFIER: US 6399782 B1

TITLE: Benzimidazole inhibitors of fructose 1,6-bisphosphatase

DATE-ISSUED: June 4, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kasibhatla; Srinivas Rao	San Diego	CA		
Reddy; K. Raja	San Diego	CA		
Erion; Mark D.	Del Mar	CA		
Dang; Qun	San Diego	CA		
Scarlato; Gerard R.	La Jolla	CA		
Reddy; M. Rami	San Diego	CA		

US-CL-CURRENT: 514/79; 544/139, 544/337, 544/57, 548/112, 548/113, 548/235,  
548/304.7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 4. Document ID: US 6294672 B1

L14: Entry 4 of 9

File: USPT

Sep 25, 2001

US-PAT-NO: 6294672

DOCUMENT-IDENTIFIER: US 6294672 B1

TITLE: Indole and azaindole inhibitors of Fructose-1,6-biphosphatase

DATE-ISSUED: September 25, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reddy; K. Raja	San Diego	CA		
Scarlato; Gerard R.	La Jolla	CA		
Dang; Qun	San Diego	CA		
Erion; Mark D.	Del Mar	CA		
Kasibhatla; Srinivas Rao	San Diego	CA		
Reddy; M. Rami	San Diego	CA		

US-CL-CURRENT: 546/23; 546/121

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 5. Document ID: US 6110903 A

L14: Entry 5 of 9

File: USPT

Aug 29, 2000

US-PAT-NO: 6110903

DOCUMENT-IDENTIFIER: US 6110903 A

TITLE: Benzimidazole inhibitors of fructose 1,6-bisphosphatase

DATE-ISSUED: August 29, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kasibhatla; Srinivas Rao	San Diego	CA		
Reddy; K. Raja	San Diego	CA		
Erion; Mark D.	Del Mar	CA		
Dang; Qun	San Diego	CA		
Scarlato; Gerard R.	La Jolla	CA		
Reddy; M. Rami	San Diego	CA		

US-CL-CURRENT: 514/80; 548/113

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 6. Document ID: US 6054587 A

L14: Entry 6 of 9

File: USPT

Apr 25, 2000

US-PAT-NO: 6054587

DOCUMENT-IDENTIFIER: US 6054587 A

TITLE: Indole and azaindole inhibitors of fructose-1,6-bisphosphatase

DATE-ISSUED: April 25, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reddy; K. Raja	San Diego	CA		
Scarlato; Gerard R.	La Jolla	CA		
Dang; Qun	San Diego	CA		
Erion; Mark D.	Del Mar	CA		
Kasibhatla; Srinivas Rao	San Diego	CA		
Reddy; M. Rami	San Diego	CA		

US-CL-CURRENT: 548/113

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 7. Document ID: US 3956200 A

L14: Entry 7 of 9

File: USPT

May 11, 1976

US-PAT-NO: 3956200

DOCUMENT-IDENTIFIER: US 3956200 A

TITLE: Flame retardant blends for flexible polyurethane foams

DATE-ISSUED: May 11, 1976

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Biranowski; Jerome	New York	NY		

US-CL-CURRENT: 521/108; 521/169, 521/174

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RWMC
Draw Desc	Image									

☐ 8. Document ID: US 3906061 A

L14: Entry 8 of 9

File: USPT

Sep 16, 1975

US-PAT-NO: 3906061

DOCUMENT-IDENTIFIER: US 3906061 A

TITLE: Halogen containing phosphorus monools

DATE-ISSUED: September 16, 1975

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boyer; Nicodemus E.	Parkersburg	WV		

US-CL-CURRENT: 558/156; 558/159, 558/161, 558/167, 558/168, 558/177, 558/180,  
558/192, 558/88, 987/147, 987/217, 987/224

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RWMC
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☐ 9. Document ID: US 3758646 A

L14: Entry 9 of 9

File: USPT

Sep 11, 1973

US-PAT-NO: 3758646

DOCUMENT-IDENTIFIER: US 3758646 A

**\*\* See image for Certificate of Correction \*\***

TITLE: HALOGEN CONTAINING PHOSPHORUS MONOOLS

DATE-ISSUED: September 11, 1973

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boyer; Nicodemus E.	Parkersburg	WV		

US-CL-CURRENT: 558/188; 521/107, 521/108, 521/169, 524/139, 524/142, 524/144,  
524/149, 558/140, 558/156, 558/167, 558/168, 558/177, 558/186, 558/202, 987/147,

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Sep 16, 1975

As the polyol material there can be used compounds such as polyethylene glycols having molecular weights of 400 to 3000, polypropylene glycols having molecular weights of 400 to 3000, ethylene glycol, diethylene glycol, triethylene glycol, propylene glycol, dipropylene glycol, tripropylene glycol, 1,4-butanediol, thiodiglycol, glycerol, trimethylolethane, trimethylolpropane, ether triols from glycerine and propylene oxide having molecular weights of 1000 and 3000 (available commercially as LG-168 and LG-56, respectively), ether containing triols from 1,2,6-hexanetriol and propylene oxide having molecular weights of 750, 1500, 2400, and 4000 (available commercially as LHT 240, LHT 112, LHT 67 and LHT 42, respectively), sorbitolpropylene oxide adduct having a molecular weight of 1,000 pentaerythritol-propylene oxide adduct having a molecular weight of 400 or 100, trimethylol phenol, oxypropylated sucrose, triethanolamine, pentaerythritol, diethanolamine, castor oil, blown linseed oil, blown soya oil, N,N,N',N'-tetrakis (2-hydroxyethyl) ethylenediamine, N,N,N',N'-(2-hydroxypropyl) ethylenediamine, mixed ethylene glycol-propylene glycol adipate resin (molecular weight 1900), polyethylene adipate phthalate, polyneopentylene sebacate, the product made by reacting an excess of 1,4-butanediol with adipic acid and including a small amount of triol, e.g., one molar equivalent of trimethylolpropane for each 3000 to 12,000 molecular weight units of polyester, polyester from 16 moles adipic acid, 16 moles diethylene glycol and 1 mole of trimethylolpropane, oxypropylated, p-tertiary butyl phenolformaldehyde

resin of Example 2b of de Groote U.S. Pat. No. 2,499,365 and the other oxyalkylated resins of De Groote, tris(dipropylene glycol) phosphite, and tris(polypropylene glycol 2025) phosphite, as well as the polyols disclosed in U.S. Pat. Nos. 3,184,419; 3,194,773; 3,201,358; and 3,385,801.



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L21: Entry 1 of 6

File: PGPB

Dec 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020198108

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020198108 A1

TITLE: Gel formulations for hazardous products

PUBLICATION-DATE: December 26, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gouge, Samuel Terry	Raleigh	NC	US	
Hodakowski, Leonard Edward	Raleigh	NC	US	
Weber, Paul Joseph	Durham	NC	US	
Chen, Chi-Yu Roy	Raleigh	NC	US	

US-CL-CURRENT: 504/366

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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[KMC](#)☐ 2. Document ID: US 6551963 B1

L21: Entry 2 of 6

File: USPT

Apr 22, 2003

US-PAT-NO: 6551963

DOCUMENT-IDENTIFIER: US 6551963 B1

TITLE: Phenylpyridazinones

DATE-ISSUED: April 22, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Linker; Karl-Heinz	Leverkusen			DE
Findeisen; Kurt	Leverkusen			DE
Haas; Wilhelm	Pulheim			DE
Dollinger; Markus	Leverkusen			DE
Santel; Hans-Joachim	Leverkusen			DE

US-CL-CURRENT: 504/238; 544/239, 544/240, 544/241

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 3. Document ID: US 5714157 A

L21: Entry 3 of 6

File: USPT

Feb 3, 1998

US-PAT-NO: 5714157

DOCUMENT-IDENTIFIER: US 5714157 A

TITLE: Water-dispersible granular agricultural compositions made by heat extrusion

DATE-ISSUED: February 3, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sandell; Lionel Samuel	Wilmington	DE		
Wysong; Robert David	Wilmington	DE		

US-CL-CURRENT: 424/409; 424/405, 424/408, 424/419, 504/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 4. Document ID: US 5346068 A

L21: Entry 4 of 6

File: USPT

Sep 13, 1994

US-PAT-NO: 5346068

DOCUMENT-IDENTIFIER: US 5346068 A

TITLE: Containerization system

DATE-ISSUED: September 13, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gouge; Samuel T.	Raleigh	NC		
Shue; James E.	Raleigh	NC		

US-CL-CURRENT: 206/524.7; 206/205, 424/409

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 5. Document ID: US 5253759 A

L21: Entry 5 of 6

File: USPT

Oct 19, 1993

US-PAT-NO: 5253759

DOCUMENT-IDENTIFIER: US 5253759 A

TITLE: Containerization system

DATE-ISSUED: October 19, 1993

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gouge; Samuel T.	Raleigh	NC		
Shue; James E.	Raleigh	NC		

US-CL-CURRENT: 206/524.7; 206/205, 206/568, 424/409, 504/358, 516/102, 516/108

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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☒ 6. Document ID: US 5139152 A

L21: Entry 6 of 6

File: USPT

Aug 18, 1992

US-PAT-NO: 5139152

DOCUMENT-IDENTIFIER: US 5139152 A

TITLE: Water dispersible gel formulations

DATE-ISSUED: August 18, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hodakowski; Leonard E.	Raleigh	NC		
Chen; Chi-yu R.	Raleigh	NC		
Gouge; Samuel T.	Raleigh	NC		
Weber; Paul J.	Durham	NC		

US-CL-CURRENT: 206/524.7; 424/409, 424/412, 504/366

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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L21: Entry 3 of 6

File: USPT

Feb 3, 1998

DOCUMENT-IDENTIFIER: US 5714157 A

TITLE: Water-dispersible granular agricultural compositions made by heat extrusion

Brief Summary Text (32):

Agricultural active ingredients include herbicides, fungicides, bacteriacites, insecticides, insect antifeedants, acaricites, miticides, nematocides, and plant growth regulants. The active ingredient may be water-soluble or water-insoluble and should be chemically stable in the extrusion temperature range. It is preferred that the melting point of the active ingredient is above the extrusion temperature; lower melting active ingredients may be used but they may require a carrier. Examples of suitable active ingredients include the following: Herbicides such as acifluorfen, asulam, atrazine, bensulfuron methyl, bentazon, bromacil, bromoxynil, hydroxybenzotrile, chloramben, chlorimuron ethyl, chloroxuron, chlorsulfuron, chlortoluron, cyanazine, dazomet, desmediphan, dicamba, dichlorbenil, dichlorprop, diphenamid, dipropetryn, diuron, thiameturon, fenac, renuton, fluometuron, fluridone, fomesafen, glyphosate, hexazinone, imazamethabenz, imazaquin, imazethapyr, ioxynil, isoproturon, isouron, isoxaben, karbutilate, lenacil, MCPA, MCPB, mefenacet, mefluidide, methabenzthiauron, methazole, metribuzin, metsulfuron methyl, monuron, naptalam, neburon, nitratin, norflurzaon, oryzalin, perfluidone, phenmedipham, picloram, prometryn, pronamide, propanil, propazine, pyrazon, rimsulfuron, siduron, simazine, sulfometuron methyl, tebuthiuron, terbacil, terbuthylazine, terbutryn, thifensulfuron methyl, triclopyr, 2,4-D, 2,4-DB, triasulfuron, wibenuron methyl, triflusaluron, primisulfuron, pyrazosulfuron ethyl, nicosulfuron, ethametsulfuron methyl,

2-[2,4-dichloro-5-[(2-propynyl)oxy]phenyl-5,6,7,8-tetrahydro-1,2,4-triazol o-[4,3-a]-pyridin-3-(H)-one, methyl

2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-6-(trifl uoromethyl)-3-pyridinecarboxylate sodium salt,

N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-(2-methyl-2H-tet razol-5-yl)-1H-pyrazole-5-sulfonamide and

N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-ethoxycarbonyl-5 -pyrazolesulfonamide; fungicides such as carbendazim, thiuram, riodine, chloroneb, captan, folpot, thiophanatemethyl, thiabendazole, chlorothalonil, dichloran, captafol, iprodione, vinclozolin, kasugamycin, triadimenol, flutriafol, flusilazol, hexaconazole, and fenarimol; bactericides such as oxytetracycline dihydrate; acaricides such as hexathizox, oxythioquinox, dienochlor, and cyhexatin; and insecticides such as carbofuran, carbaryl, thiodicarb, deltamethrin, and tetrachlorvinphos. Active ingredient also include the salts of the active ingredients.

Brief Summary Text (44):

Wetting agents include but are not limited to alkyl sulfosuccinates, laurares, alkyl sulfate and phosphate esters, acetylenic diols, ethoxyfluorinated alcohols, ethoxylated silicones and alkyl phenol ethoxylates, as well as the organic sulfonates and alcohol ethoxylates used as urea modifiers. If additional wetting agent is needed, useful levels include up to about 5% by weight.

**WEST****End of Result Set**

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L21: Entry 6 of 6

File: USPT

Aug 18, 1992

DOCUMENT-IDENTIFIER: US 5139152 A

TITLE: Water dispersible gel formulations

Brief Summary Text (57):

alkanolamides, poly condensates of ethylene oxide with fatty alcohols, fatty esters, or fatty amines, or substituted phenols (particularly alkylphenols or arylphenols); block copolymers with ethoxy and propoxy groups; esters of fatty acids with polyols such as glycerol or glycol; polysaccharides; organopolysiloxanes; sorbitan derivatives; ethers or esters of sucrose or glucose; salts of lignosulphonic acids, salts of phenyl sulphonic or naphthalene sulphonic acids, diphenyl sulfonates; alkaryl sulfonates; sulfonated fatty alcohols or amines or amides; poly condensates of ethylene oxide with fatty acids and their sulfate or sulfonate derivatives; salts of sulphosuccinic or sulfosuccinamic acid esters; taurine derivatives (particularly alkyltaurates); betaine derivatives; phosphoric esters of alcohols or of polycondensates of ethylene oxide with phenols; and sulphate, sulphonate and phosphate functional derivatives of the above compounds.

Brief Summary Text (64):

Herbicides (or defoliants) such as quizalofop and its derivatives, Acetochlor, Metolachlor, Imazapur and Imazapyr, Glyphosate and Gluphosinate, Butachlor, Aciflourfen, Oxyfluorfen, Butralin, Fluazifop-butyl, Bifenox, Bromoxynil, Ioxynil, Diflufenican, Phenmedipham, Desmedipham, Oxadiazon, Mecopropo, MCPA, MCPB, MCPP, Linuron, Isoproturon, Flamprop and its derivatives, Ethofumesate, Diallylate, Carbetamide, Alachlor, Metsulfuron, Chlorsulfuron, Chlorpyralid, 2,4-d, Tribufos, Triclopyr, Diclofop-methyl, Sethoxydim, Pendimethalin, Trifluralin, Ametryn, Chloramben, Amitrole, Asulam, Dicamba, Bentazone, Atrazine, Cyanazine, Thiobencarb, Prometryn, 2-(2-chlorobenzyl)-4, 4-dimethyl-1,2-oxazolidin-3-one, Fluometuron, Napropamide, Paraquat, Bentazole, Molinate, Propachlor, Q Imizaquin, Metribuzin, Tebuthiuron, Oryzalin; and

Brief Summary Text (65):

Insecticides or nematocides such as Ebufos, Carbosulfan, Amitraz, Vamidothion, Ethion, Triazophos, Propoxur, Phosalone, Permethrin, Cypermethrin, Parathion, Methylparathion, Diazinon, Metomyl, Malathion, Lindane, Fenvalerate, Ethoprophos, Endrin, Endosulfan, Dimethoate, Dieldrin, Dicrotophos, Dichloroprop, Dichlorvos, Azinphos and its derivatives, Aldrin, Cyfluthrin, Deltamethrin, Disulfoton, Chlordimeform, Chlorpyrifos, Carbaryl, Dicofof, Thiodicarb, Propargite, Demeton, Phosalone.

Brief Summary Text (68):

The dispersant which may be used in the invention may be selected among those of the following list (which is non limiting): salts of lignosulphonic acids such as calcium lignosulfonate, salts of phenyl sulphonic or naphthalene sulphonic acids, condensed naphthalene sulfonic acid; poly condensates of ethylene oxide with fatty alcohols or fatty acids or fatty esters or fatty amines, or substituted phenols (particularly alkylphenols or arylphenols); salt of sulphonsuccinic acid esters, such as sodium sulfosuccinate; taurine derivatives (particularly alkyltaurates); phosphoric esters of alcohols or polycondensates of ethylene oxide with phenols; esters of polyols and of fatty acids or sulfuric acid or sulphonic acids or phosphoric acids; glyceryl esters, especially esters with fatty acids such as glyceryl stearate; ethylene glycols; and the like.

Detailed Description Text (132):  
polyarylphenol ethoxylated: 6%

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**Search Results - Record(s) 1 through 2 of 2 returned.**☒ 1. Document ID: US 4767448 A

L22: Entry 1 of 2

File: USPT

Aug 30, 1988

US-PAT-NO: 4767448

DOCUMENT-IDENTIFIER: US 4767448 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Herbicidal compositions comprising phenyl carbamates and other herbicides

DATE-ISSUED: August 30, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nielsen; Erik	Greve Strand			DK

US-CL-CURRENT: 504/301; 504/130, 504/135, 504/140, 504/363, 504/364

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 2. Document ID: US 4748265 A

L22: Entry 2 of 2

File: USPT

May 31, 1988

US-PAT-NO: 4748265

DOCUMENT-IDENTIFIER: US 4748265 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Process for the preparation of herbicidally active phenyl carbamates

DATE-ISSUED: May 31, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Oxbol; Arne	Copenhagen			DK
Jensen; Ole	Koge			DK

US-CL-CURRENT: 560/25; 504/301, 560/24, 560/27, 560/29

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L22: Entry 1 of 2

File: USPT

Aug 30, 1988

DOCUMENT-IDENTIFIER: US 4767448 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Herbicidal compositions comprising phenyl carbamates and other herbicides

Brief Summary Text (5):

An especially preferred compound of the general formula A is methyl(3-(3-tolyl-carbamoyloxy)phenyl)carbamate which has later been given the common name phenmedipham. Another especially preferred compound is ethyl(3-phenyl-carbamoyloxyphenyl)carbamate which has later been given the common name desmedipham. Methyl(3-(3-tolyl-carbamoyloxy)phenyl)carbamate is commercially available under the trade mark Betanal and is used especially as post-emergence herbicide for the weeding of beet crops, in particular sugar beet, at an application rate of 1 kg a.i./200-300 liter/ha. It has been reported (Pesticide Manual, A World Compendium, The British Crop Protection Council, 6th Edition, 1979) that the compound acts through the leaves with little action via the soil and roots. In the soil there was, in three months, a 71-86% degradation of the a.i. (active ingredient) detected one day after treatment.

Brief Summary Text (121):

Suitable surfactants are, for example, salts of lignosulphonic acid, salts of alkylated benzenesulphonic acids, polyethoxylated amines, polyethoxylated alcohols and polyethoxylated phenols.

Brief Summary Text (123):

It is customary to include ionic emulsifiers such as calcium dodecyl benzene sulfonate in commercial solutions of phenmedipham in isophorone. It has also been suggested to use salts of phosphoric acid esters as emulsifiers. In accordance with an aspect of the present invention, it has been found that ampholytes are interesting and useful emulsifiers for solutions of phenmedipham in isophorone, preferably in combination with non-ionic surfactants. It is assumed that the ionic character of ampholytes counteracts the tendency which phenmedipham otherwise has to precipitate, first as an oil and later as microcrystals, when the composition is mixed with water for preparing the solution ready for use. It is believed that the function of the ampolyte is to act as emulsifiers and dispersing agents for any precipitated active substance in the oily state so that precipitation of solid is delayed or avoided.

Brief Summary Text (124):

As examples of ampholytes which are useful in solutions of phenmedipham in isophorone may be mentioned N-alkyl-.beta.-aminopropionic acids (wherein alkyl designates groups of 8-22 carbon atoms), N-alkyl N-dimethylamino acetic acid (betaine) and imidazolin-amphotensides such as compounds of the formulae ##STR9## and carboxymethylated and ethylated derivatives of the formulae.

Brief Summary Text (127):

Normally, the concentrated solutions of phenmedipham in isophorone have a concentration of phenmedipham in the range of 10-20%. When one or several ampholytes are used as emulsifiers in the solutions, the ampholyte or ampholytes is/are normally present in an amount of 1-20%, preferably 2-12%, more preferably 3-7% by weight, calculated on the weight of the composition. A preferred ampholyte for use in this aspect of the invention is coco alkyl-.beta.-amino propionic acid which is preferably present in an amount of 2-10%, preferably 3-7%, e.g. about 5% by weight



of the composition.

Brief Summary Text (132):

Usable surfactants are non-ionic compounds such as polyethoxylated alkylphenols, polyethoxylated higher alkanols, polyethoxylated fatty acids, polyethoxylated amines and amides, monoglycerides and derivatives thereof. Alkylarylsulphonic acids and phosphoric acid esters and salts thereof will also be usable surfactants. Phosphoric acid esters may be mono- and diesters of polyethoxylated higher alkanols, polyethoxylated alkylphenols, polyethoxylated distyryl- and tristyrylphenols and non-ethoxylated alcohols. Furthermore, ampholytes will be usable surfactants. Other surfactants are e.g. as described in McCutcheon's publication: Detergent & Emulsifiers, International Edition, 1983, Glen Rock, N.J. 07452, USA. Corresponding surfactants from other suppliers are, of course, also applicable.

Brief Summary Text (137):

Oil-containing phenmedipham dispersions show a biological effect comparable with preparations made up with isophorone.

Brief Summary Text (139):

The above-described method for preparing oil-based compositions does not only apply to compositions comprising substituted phenyl carbamates I, but may also be used in the preparation of other compositions comprising other types of herbicides and pesticides. As examples of herbicides may be mentioned

5-amino-4-chloro-2-phenyl-3 (2H)pyridazinone (chloridazon),  
2-ethoxy-2,3-dihydro-3,3-dimethylbenzofuran-5-yl methanesulphonate (ethofumesate),  
and 4-amino-4,5-dihydro-3-methyl-6-phenyl-1,2,4-triazin-5-one (metamitron), which may also be used in combination with each other or with the phenyl carbamates I.

Brief Summary Text (141):

The above-mentioned compound metamitron is used as a herbicide for beets, normally in a dose of about 3-4 kg/ha. When metamitron in some cases is preferred instead of phenyl carbamates I which are used in a dose of about 1 kg/ha only, this is due to the fact that metamitron has a better biological effect against cleavers goosegrass (Galium aprine), nippelwort (Lapsana communis) and black nightshade (Solanum nigrum). A much better biological effect is obtained in the combating of corn marigold (Chrysanthemum segetum), wild chamomile (Matricaria chamomilla), small nettle (Urtica urens) and annual meadow grass (Poa annua). The other 15-20 weed species in beets which are common in Denmark are combated equally well with phenmedipham and metamitron.

Brief Summary Text (142):

To this should be added that metamitron in a dosis of 3-4 kg/ha is less aggressive (phytotoxic) to the beet plants than phenmedipham used in a dosis of 1 kg/ha.

Brief Summary Text (143):

Farmers often prefer to use a mixture of metamitron and phenmedipham in which each of the preparations is used in a dosage which is half of the usual dosage. In this way, a biological effect which is fully up to what may be obtained when using metamitron alone is obtained. Nor is the herbicidal mixture more phytotoxic than when metamitron is used alone.

Brief Summary Text (144):

Metamitron is normally commercially available as a 70% wettable powder and phenmedipham as a 16% emulsion composition containing isophorone. Up till now, the farmers have themselves mixed the compositions in connection with the spraying. It is, however, not practical for the user to mix two types of compositions which are so different. The mixing is best performed by diluting each composition separately in part of the dilution water and then performing the mixing. In order to activate the metamitron biologically, mineral oil is often added which oil is emulgated into the spraying solution. Thus, there will be a risk of spraying problems (nozzle stops) if the mixing is not performed carefully. When using several products, there will be a larger risk of wrongly apportioning the products. Finally, when using the present product which is characterized in that both phenmedipham and metamitron are dispersed in an oil/surfactant mixture, it is achieved that the user--contrary to

the practice existing up till now--totally avoids dust from the wettable powder, and that isophorone is not used as the solvent.

Brief Summary Text (145):

Thus, an interesting aspect of the invention is a composition comprising phenmedipham or desmedipham in an amount of 2-15%, preferably 3-8%, e.g. about 6% by weight, metamitron in an amount of 5-40%, preferably 10-30%, e.g. about 17% by weight, formulated with an oily component such as mineral oil, e.g. spindle oil, in an amount of 10-75%, e.g. about 30% by weight, a surfactant or surfactant mixture comprising ethoxylated nonyl phenol (3-9 ethylene oxide units per molecule) and optionally a phosphoric acid ester salt such as Berol.TM.724, monoethanolamine salt, and/or an alkyl or aryl or alkylaryl sulphonic acid salt, such as dodecyl benzene sulphonic acid triethanolamine salt or a linear alkyl (C.sub.10 -C.sub.22) sulphonic acid salt (LAS), the total amount of surfactant or surfactant mixture being 5-50%, e.g. about 40% by weight, butyl glycol in an amount of 0-10%, e.g., about 7.5% by weight, and optionally water, all amounts calculated on the total composition. A mixed composition may be prepared by mixing a dispersion comprising phenmedipham and a dispersion comprising metamitron, which dispersion may be prepared individually in liquid phases comprising an oily component such as spindle oil in an amount of about 30-35%, a surfactant mixture consisting of an alkyl or aryl or alkylaryl sulphonic acid salt such as dodecyl benzene sulphonic acid-triethanolamine salt in an amount of about 8-10% by weight, ethoxylated nonyl phenol in an amount of about 30-35% by weight and butyl glycol in an amount of about 7-9% by weight.

Brief Summary Text (146):

The solubility of phenmedipham and metamitron in mineral oil is about 0.1%, depending on the content of aromatics in the oil. In the above-described water-emulsifiable liquids which are solutions comprising oil and surfactant, the solubility of phenmedipham and metamitron is about 3% when the content of surfactant in the liquid is of the same order as the content of oil. However, at such a high solubility, there may be a tendency of slow crystal growth of phenmedipham and/or metamitron in the dispersions during storage under varying temperature conditions, which means that the compositions will be less stable under such conditions. In microemulsions with a content of about 25% of water, the solubility of phenmedipham is reduced by a factor of 10 to about 0.3%. A similar reduction does not take place for metamitron. In addition, it tends to be more time-consuming to dilute metamitron dispersions in water than phenmedipham dispersions, probably because of the dissolved proportion of metamitron. However, once emulsions or microemulsions have been formed in the dilution, they are very stable.

Brief Summary Text (147):

To lower the solubility of phenmedipham and metamitron in the liquid and to counteract the tendency for metamitron compositions to be more time-consuming to dilute with water, the proportion of oil in the liquid may be kept high and the proportion of surfactant correspondingly low, and an oil may be used which has a limited content of aromatics, that is, a content of less than 30% by weight, preferably less than 10% by weight. (As an example of a preferred oil for this purpose may be mentioned a mineral oil having a boiling point above 200.degree. C. and a viscosity of less than 100 cSt at 40.degree. C. and, as mentioned above, a content of aromatics of less than 30% by weight, preferably less than 10% by weight.) However, it has been found that if the amount of oil is increased to about 60% and the amount of surfactant is reduced to about 10-15%, there will be a pronounced tendency for the composition to separate sticky sediments of oil and fine-grained herbicide when the composition is diluted with water. Also, the proportion of oil which is emulsified into the water phase will tend to separate again as an upper phase.

Brief Summary Text (148):

Thus, in compositions with a high amount of oil which has a low content of aromatics, there is a pronounced necessity for the use of a highly efficient emulsifier (surfactant) system. A sufficiently efficient emulsifier (surfactant) which will secure a satisfactory emulsifiability of the mineral oils with relatively low content of aromatics may for example be obtained by replacing part of the above-mentioned ethoxylated nonylphenols with ethoxylated dinonylphenols and combining them with either phosphoric acid ester salts such as Berol.TM.724

monoethanolamine salt and/or an alkyl or aryl or alkylaryl sulphonic acid ester salt such as dodecyl benzene sulfonic acid triethanolamine salt, the total amount of surfactant being about 5-20%, e.g. about 10-15%, calculated on the composition, and the amount of mineral oil of low aromatics content, e.g. solvent-refined paraffinic mineral oil in an amount of 40-75%, e.g. about 60% by weight. Part of the oil may be replaced with a lower boiling petroleum factor such as kerosene. Thus, interesting compositions according to the invention comprise 15-40, preferably 20-30% by weight of either phenmedipham or metamitron or a combination of phenmedipham and metamitron dispersed in a liquid phase which contains a mineral oil in an amount of 10-75%, e.g. about 50-70%, such as about 60% by weight, a surfactant or surfactant mixture comprising ethoxylated alkylphenol (containing 3-9 ethylene oxide units) in which the alkyl group contains 4-15, in particular 6-12 carbon atoms, and/or ethoxylated dialkylphenol (containing 4-14 ethylene oxide units) in which the alkyl group contains 4-15, in particular 6-12 carbon atoms, and optionally a phosphoric acid ester salt and/or an alkyl or aryl or alkylaryl sulphonic acid salt, the total amount of surfactant or surfactant mixture being 5-25%, preferably 10-15%, by weight. The mineral oil may, e.g., be solvent-refined mineral oil in an amount of about 50% combined with aromatics-free kerosene (boiling point 190.degree.-240.degree. C.) in an amount of about 10%, the ethoxylated dinonylphenol (containing 9 ethylene oxide units) may, e.g., be present in an amount of about 5%, the ethoxylated nonylphenol (containing 4 ethylene oxide units) may, e.g., be present in an amount of about 3% and phosphoric acid ester (Berol.TM.724) monoethanolamine salt may, e.g., be present in an amount of about 5%. The amount of dispersed phenmedipham should preferably constitute 20-40%, more preferably 25-35% of the composition, and the amount of dispersed metamitron should preferably constitute 15-35%, more preferably 20-30% of the composition. Combined compositions may be prepared by mixing phenmedipham and metamitron dispersions. The dispersions prepared in this manner are easy to dilute with water. Both phenmedipham and metamitron are dispersed satisfactorily, and the oily phase forms sufficiently stable emulsions in the water. In these oil-detergent mixtures, the solubility of phenmedipham and metamitron is about 0.2%. The compositions are preferably substantially free from water which increases the chemical stability of the active substances.

Detailed Description Text (66):

Concentrated solution of phenmedipham in isophorone with ampholyte

Detailed Description Text (72):

Phenmedipham dispersions comprising an oil-based microemulsion or solution as the liquid phase

Detailed Description Text (73):

Microemulsions I and III and a solution II were prepared without phenmedipham by mixing the constituents. Then, one part by weight of phenmedipham (technical grade, 96%) was incorporated into 3 parts by weight of the liquid phase in each of I, II and III, and each of the resulting mixtures was ground in a ball mill charged with glass balls (.phi. 1 mm).

Detailed Description Text (75):

After standing for 3 weeks at 45.degree.-50.degree. C., all of the phenmedipham-containing dispersions were uniform after moderate shaking.

Detailed Description Text (77):

Phenmedipham and metamitron dispersions comprising an oil-based solution as the liquid phase

Detailed Description Text (79):

A combined composition consisting of 75% by weight of dispersion I and 25% by weight of dispersion II was prepared by mixing the dispersions. The composition formed was a viscous composition containing about 6% of phenmedipham and about 17% of metamitron which could be diluted with water by somewhat prolonged mixing and resulted in stable dispersions.

Detailed Description Text (88):

A combined composition of 77.5% by weight of dispersion I and 22.5% by weight of

dispersion II was prepared by mixing the dispersions. The composition contained about 19% of metamitron and 6.5% of phenmedipham.

Detailed Description Paragraph Table (5):

		Ingredients		Dispersion I	Dispersion II
		Triethanolamine		2.6%	2.5%
		Sulfosoft.TM.		5.9%	
5.7% Spindle oil		29.3%	28.4%	Marlophen.TM. 88H	19.1%
Butyl glycol		7.4%	7.1%	77.5%	75.0%
25.0% Tech. grade,		96% pH of dispersion (in a 1:10 3-4 3-4 dilution with water)			

Detailed Description Paragraph Table (7):

TABLE 3				I	II
		Hydro Para 19(6)		51.2	47.7
190/240 (7)		10.2	9.5	Berol.TM. 26	(4) 3.1
724 (1)		4.4	4.1	Monoethanolamine	1.0
<u>phenmedipham</u> , 96% Technical grade		25.0%	metamitron,	98%	% of <u>phenmedipham</u> in 28.8%
composition % of metamitron in 24.5% composition pH (in a 1:10 dilution about 3 about 3 with water)					(1) Acidic phosphoric acid ester (Berol Kemi) (4) Ethoxylated nonylphenol (4 ethylene oxide units per molecule) (Berol Kemi) (6) Solvent refined paraffinic mineral oil (Norsk Hydro) (4% aromatics, viscosity 19.7 cSt at 40.degree. C.) (7) Paraffin hydrocarbon, <0.1% of aromatic hydrocarbon, boiling point 190240.degree. C., flash point >70.degree. C. (Haltermann) (8) Ethoxylated dinonylphenol (9 ethylene oxide units per molecule) (Bero Kemi)

CLAIMS:

1. A stabilized liquid herbicidal composition comprising as an active ingredient a herbicidally effective amount of phenmedipham and/or desmedipham in which the active ingredient in a finely ground state is dispersed in an acidic liquid phase which comprises at least one oily component in an amount of 5-75% by weight, and at least one surfactant in an amount of 5-60% by weight, said oily component and surfactant may be able to form a stable solution which is capable of effectively suspending the active ingredient and said oily component being a mixture comprising a mineral oil, a chlorinated mineral oil or a vegetable oil in combination with at least one lower carboxylic acid ester of a monoalcohol or polyalcohol.

3. A composition according to claim 1 comprising phenmedipham in an amount of 15-40% by weight formulated with an oily component in an amount of 10-75% by weight, and one or more surfactants in an amount of 5-25% by weight.

7. The composition according to claim 1, wherein the surfactants are selected from the group consisting of polyethoxylated alkylphenols, polyethoxylated higher alkanols, alkylarylsulphonic acids and phosphoric acid esters and salts thereof, and mixtures thereof.

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TITLE: Process for the preparation of herbicidally active phenyl carbamates

Brief Summary Text (5):

An especially preferred compound of the general formula A is methyl(3-(3-tolyl-carbamoyloxy)phenyl)carbamate which has later been given the common name phenmedipham. Another especially preferred compound is ethyl(3-phenyl-carbamoyloxyphenyl)carbamate which has later been given the common name desmedipham. Methyl(3-(3-tolylcarbamoyloxy)phenyl)carbamate is commercially available under the trade mark Betanal and is used especially as post-emergence herbicide for the weeding of beet crops, in particular sugar beet, at an application rate of 1 kg a.i./200-300 liters/ha. It has been reported (Pesticide Manual, A World Compendium, The British Crop Protection Council, 6th Edition, 1979) that the compound acts through the leaves with little action via the soil and roots. In the soil there was, in three months, a 71-86% degradation of the a.i. (active ingredient) detected one day after treatment.

Brief Summary Text (119):

Suitable surfactants are, for example, salts of lignosulphonic acid, salts of alkylated benzenesulphonic acids, polyethoxylated amines, polyethoxylated alcohols and polyethoxylated phenols.

Brief Summary Text (121):

It is customary to include ionic emulsifiers such as calcium dodecyl benzene sulfonate in commercial solutions of phenmedipham in isophorone. It has also been suggested to use salts of phosphoric acid esters as emulsifiers. In accordance with an aspect of the present invention, it has been found that ampholytes are interesting and useful emulsifiers for solutions of phenmedipham in isophorone, preferably in combination with non-ionic surfactants. It is assumed that the ionic character of ampholytes counteracts the tendency which phenmedipham otherwise has to precipitate, first as an oil and later as microcrystals, when the composition is mixed with water for preparing the solution ready for use. It is believed that the function of the ampholyte is to act as emulsifiers and dispersing agents for any precipitated active substance in the oily state so that precipitation of solid is delayed or avoided.

Brief Summary Text (122):

As examples of ampholytes which are useful in solutions of phenmedipham in isophorone may be mentioned N-alkyl-.beta.-aminopropionic acids (wherein alkyl designates groups of 8-22 carbon atoms), N-alkyl N-dimethylamino acetic acid (betaine) and imidazolin-amphotensides such as compounds of the formulae ##STR10## and carboxymethylated and ethylated derivatives of the formulae

Brief Summary Text (125):

Normally, the concentrated solutions of phenmedipham in isophorone have a concentration of phenmedipham in the range of 10-20%. When one or several ampholytes are used as emulsifiers in the solutions, the ampholyte or ampholytes is/are normally present in an amount of 1-20%, preferably 2-12%, more preferably 3-7% by weight, calculated on the weight of the composition. A preferred ampholyte for use in this aspect of the invention is coco alkyl-.beta.-amino propionic acid which is

preferably present in an amount of 2-10%, preferably 3-7%, e.g. about 5% by weight of the composition.

Brief Summary Text (130):

Usable surfactants are non-ionic compounds such as polyethoxylated alkylphenols, polyethoxylated higher alkanols, polyethoxylated fatty acids, polyethoxylated amines and amides, monoglycerides and derivatives thereof. Alkylarylsulphonic acids and phosphoric acid esters and salts thereof will also be usable surfactants. Phosphoric acid esters may be mono- and diesters of polyethoxylated higher alkanols, polyethoxylated alkylphenols, polyethoxylated distyryl- and tristyrylphenols and non-ethoxylated alcohols. Furthermore, ampholytes will be usable surfactants. Other surfactants are e.g. as described in McCutcheon's publication: Detergent & Emulsifiers, International Edition, 1983, Glen Rock, N.J. 07452, USA. Corresponding surfactants from other suppliers are, of course, also applicable.

Brief Summary Text (135):

Oil-containing phenmedipham dispersions show a biological effect comparable with preparations made up with isophorone.

Brief Summary Text (137):

The above-described method for preparing oil-based compositions does not only apply to compositions comprising substituted phenyl carbamates I, but may also be used in the preparation of other compositions comprising other types of herbicides and pesticides. As examples of herbicides may be mentioned 5-amino-4-chloro-2-phenyl-3(2 H)pyridazinone (chloridazon), 2-ethoxy-2,3-dihydro-3,3-dimethylbenzofuran-5-yl methanesulphonate (ethofumesate), and 4-amino-4,5-dihydro-3-methyl-6-phenyl-1,2,4-triazin-5-one (metamitron), which may also be used in combination with each other or with the phenyl carbamates I.

Brief Summary Text (141):

Farmers often prefer to use a mixture of metamitron and phenmedipham in which each of the preparations is used in a dosage which is half of the usual dosage. In this way, a biological effect which is fully up to what may be obtained when using metamitron alone is obtained. Nor is the herbicidal mixture more phytotoxic than when metamitron is used alone.

Brief Summary Text (142):

Metamitron is normally commercially available as a 70% wettable powder and phenmedipham as a 16% emulsion composition containing isophorone. Up till now, the farmers have themselves mixed the compositions in connection with the spraying. It is, however, not practical for the user to mix two types of compositions which are so different. The mixing is best performed by diluting each composition separately in part of the dilution water and then performing the mixing. In order to activate the metamitron biologically, mineral oil is often added which oil is emulgated into the spraying solution. Thus, there will be a risk of spraying problems (nozzle stops) if the mixing is not performed carefully. When using several products, there will be a larger risk of wrongly apportioning the products. Finally, when using the present product which is characterized in that both phenmedipham and metamitron are dispersed in an oil/surfactant mixture, it is achieved that the user--contrary to the practice existing up till now--totally avoids dust from the wettable powder, and that isophorone is not used as the solvent.

Brief Summary Text (143):

Thus, an interesting aspect of the invention is a composition comprising phenmedipham or desmedipham in an amount of 2-15%, preferably 3-8%, e.g. about 8% by weight, metamitron in an amount of 5-40%, preferably 10-30%, e.g. about 17% by weight, formulated with an oily component such as mineral oil, e.g. spindle oil, in an amount of 10-75%, e.g. about 30% by weight, a surfactant or surfactant mixture comprising ethoxylated nonyl phenol (3-9 ethylene oxide units per molecule) and optionally a phosphoric acid ester salt such as Berol.TM.724, monoethanolamine salt, and/or an alkyl or aryl or alkylaryl sulphonic acid salt, such as dodecyl benzene sulphonic acid triethanolamine salt or a linear alkyl (C.sub.10 -C.sub.22) sulphonic acid salt (LAS), the total amount of surfactant or surfactant mixture being 5-50%, e.g. about 40% by weight, butyl glycol in an amount of 0-10%, e.g. about 7.5% by weight, and optionally water, all amounts calculated on the total composition. A

mixed composition may be prepared by mixing a dispersion comprising phenmedipham and a dispersion comprising metamitron, which dispersion may be prepared individually in liquid phases comprising an oily component such as spindle oil in an amount of about 30-35%, a surfactant mixture consisting of an alkyl or aryl or alkylaryl sulphonic acid salt such as dodecyl benzene sulphonic acid-triethanolamine salt in an amount of about 8-10% by weight, ethoxylated nonyl phenol in an amount of about 30-35% by weight and butyl glycol in an amount of about 7-9% by weight.

Brief Summary Text (144):

The solubility of phenmedipham and metamitron in mineral oil is about 0.1%, depending on the content of aromatics in the oil. In the above-described water-emulsifiable liquids which are solutions comprising oil and surfactant, the solubility of phenmedipham and metamitron is about 3% when the content of surfactant in the liquid is of the same order as the content of oil. However, at such a high solubility, there may be a tendency of slow crystal growth of phenmedipham and/or metamitron in the dispersions during storage under varying temperature conditions, which means that the compositions will be less stable under such conditions. In microemulsions with a content of about 25% of water, the solubility of phenmedipham is reduced by a factor of 10 to about 0.3%. A similar reduction does not take place for metamitron. In addition, it tends to be more time-consuming to dilute metamitron dispersions in water than phenmedipham dispersions, probably because of the dissolved proportion of metamitron. However, once emulsions or microemulsions have been formed in the dilution, they are very stable.

Brief Summary Text (145):

To lower the solubility of phenmedipham and metamitron in the liquid and to counteract the tendency for metamitron compositions to be more time-consuming to dilute with water, the proportion of oil in the liquid may be kept high and the proportion of surfactant correspondingly low, and an oil may be used which has a limited content of aromatics, that is, a content of less than 30% by weight, preferably less than 10% by weight. (As an example of a preferred oil for this purpose may be mentioned a mineral oil having a boiling point above 200.degree. C. and a viscosity of less than 100 cSt at 40.degree. C. and, as mentioned above, a content of aromatics of less than 30% by weight, preferably less than 10% by weight.) However, it has been found that if the amount of oil is increased to about 60% and the amount of surfactant is reduced to about 10-15%, there will be a pronounced tendency for the composition to separate sticky sediments of oil and fine-grained herbicide when the composition is diluted with water. Also, the proportion of oil which is emulsified into the water phase will tend to separate again as an upper phase.

Brief Summary Text (146):

Thus, in compositions with a high amount of oil which has a low content of aromatics, there is a pronounced necessity for the use of a highly efficient emulsifier (surfactant) system. A sufficiently efficient emulsifier (surfactant) which will secure a satisfactory emulsifiability of the mineral oils with relatively low content of aromatics may for example be obtained by replacing part of the above-mentioned ethoxylated nonylphenols with ethoxylated dinonylphenols and combining them with either phosphoric acid ester salt such as Berol.TM.724 monoethanolamine salt and/or an alkyl or aryl or alkylaryl sulphonic acid ester salt such as dodecyl benzene sulfonic acid triethanolamine salt, the total amount of surfactant being about 5-20%, e.g. about 10-15%, calculated on the composition, and the amount of mineral oil of low aromatics content, e.g. solvent-refined paraffinic mineral oil in an amount of 40-75%, e.g. about 60% by weight. Part of the oil may be replaced with a lower boiling petroleum fraction such as kerosene. Thus, interesting compositions according to the invention comprise 15-40, preferably 20-30% by weight of either phenmedipham or metamitron or a combination of phenmedipham and metamitron dispersed in a liquid phase which contains a mineral oil in an amount of 10-75%, e.g. about 50-70%, such as about 60% by weight, a surfactant or surfactant mixture comprising ethoxylated alkylphenol (containing 3-9 ethylene oxide units) in which the alkyl group contains 4-15, in particular 6-12 carbon atoms, and/or ethoxylated dialkylphenol (containing 4-14 ethylene oxide units) in which the alkyl group contains 4-15, in particular 6-12 carbon atoms, and optionally a phosphoric acid ester salt and/or an alkyl or aryl or alkylaryl sulphonic acid salt, the total amount of surfactant or surfactant mixture being 5-25%, preferably 10-15%, by

weight. The mineral oil may, e.g., be solvent-refined mineral oil in an amount of about 50% combined with aromatics-free kerosene (boiling point 190.degree.-240.degree. C.) in an amount of about 10%, the ethoxylated dinonylphenol (containing 9 ethylene oxide units) may, e.g., be present in an amount of about 5%, the ethoxylated nonylphenol (containing 4 ethylene oxide units) may, e.g., be present in an amount of about 3% and phosphoric acid ester (Berol.TM.724) monoethanolamine salt may, e.g., be present in an amount of about 5%. The amount of dispersed phenmedipham should preferably constitute 20-40%, more preferably 25-35% of the composition, and the amount of dispersed metamitron should preferably constitute 15-35%, more preferably 20-30% of the composition. Combined compositions may be prepared by mixing phenmedipham and metamitron dispersions. The dispersions prepared in this manner are easy to dilute with water. Both phenmedipham and metamitron are dispersed satisfactorily, and the oily phase forms sufficiently stable emulsions in the water. In these oil-detergent mixtures, the solubility of phenmedipham and metamitron is about 0.2%. The compositions are preferably substantially free from water which increases the chemical stability of the active substances.

Detailed Description Text (66):

Concentrated solution of phenmedipham in isophorone with ampholyte

Detailed Description Text (69):

Concentrated solution of phenmedipham in isophorone with ampholyte

Detailed Description Text (72):

Phenmedipham dispersions comprising an oil-based microemulsion or solution as the liquid phase

Detailed Description Text (73):

Microemulsions I and III and a solution II were prepared without phenmedipham by mixing the constituents. Then, one part by weight of phenmedipham (technical grade, 96%) was incorporated into 3 parts by weight of the liquid phase in each of I, II and III, and each of the resulting mixtures was ground in a ball mill charged with glass balls (.phi.1 mm).

Detailed Description Text (75):

After standing for 3 weeks at 45.degree.-50.degree. C., all of the phenmedipham-containing dispersions were uniform after moderate shaking.

Detailed Description Text (77):

Phenmedipham and metamitron dispersions comprising an oil-based solution as the liquid phase

Detailed Description Text (79):

A combined composition consisting of 75% by weight of dispersion I and 25% by weight of dispersion II was prepared by mixing the dispersions. The composition formed was a viscous composition containing about 6% of phenmedipham and about 17% of metamitron which could be diluted with water by somewhat prolonged mixing and resulted in stable dispersions.

Detailed Description Text (85):

Metamitron and phenmedipham dispersions comprising an oil-based solution as the liquid phase

Detailed Description Text (87):

When mixed with water, the oil-containing liquid phases do not form stable transparent microemulsions as described in the preceding examples, but rather form conventional emulsions which, however, precipitate oil only very slowly. The tendency to separate sediments of oil which contain fine-grained metamitron or phenmedipham, respectively, is negligible.

Detailed Description Text (88):

A combined composition of 77.5% by weight of dispersion I and 22.5% by weight of dispersion II was prepared by mixing the dispersions. The composition contained about 19% of metamitron and 6.5% of phenmedipham.



Detailed Description Paragraph Table (4):

TABLE 1	I	II	III
	Water 25.9%	21.0%	Monoethanolamine 2.6% Berol .TM. 724.sup.(1) 10.3% Triethanolamine 2.5% 2.0% Sulfosoft .TM..sup.(2) 5.7% 4.5% Spindle oil.sup.(5) 17.2% 28.4% 18.2% Marlophen .TM. 88 H.sup.(3) 12.1% 18.5% 12.8% Berol .TM. 26.sup.(4) 5.2% 12.8% 8.2% Butyl glycol 1.7% 7.1% 4.6% Propylene glycol 3.7% Total 75.0% 75.0% 75.0% Appearance translucent translucent translucent yellowish yellow liquid brown liquid liquid pH (in a 1:10 dilu- 2.8 3.4 3.7 tion with water) Turbidity temp. 60.degree. C. >80.degree. C. 58.degree. C. Dilution 1:1 Translucent Translucent Translucent yellow yellow yellow liquid liquid liquid Dilution 1:1, Slightly Translucent Translucent after 24 h turbid gelatinous liquid liquid liquid Dilution 1:10 Translucent Translucent Translucent slightly liquid liquid opaque liquid Dilution 1:50 Translucent Opaque, Translucent liquid but slightly translucent opaque liquid liquid Technical grade 25% 25% 25% <u>phenmedipham</u> , 96% % of <u>phenmedipham</u> 24% 24% 24% in composition
	(1) Acidic phosphoric acid ester (Berol Kemi)		
	(2) Dodecylbenzenesulfonic acid (Berol Kemi) (3) Ethoxylated nonylphenol (8 ethylene oxide units per molecule) (Huls) (4) Ethoxylated nonylphenol (4 ethylene oxide units per molecule) (Berol Kemi) (5) Gravex .TM. 19 (Shell)		

Detailed Description Paragraph Table (5):

Ingredients	Dispersion I	Dispersion II
Triethanolamine 2.6% 2.5% Sulfosoft .TM. 5.9% 5.7% Spindle oil 29.3% 28.4% Marlophen .TM. 88 H 19.1% 18.5% Berol .TM. 26 13.2% 12.8% Butyl glycol 7.4% 7.1% 77.5% 75.0% Metamitron, 22.5% Tech. grade, 98% <u>Phenmedipham</u> , 25.0% Tech. grade, 96% pH dispersion (in a 1:10 3-4 3-4 dilution with water)		

Detailed Description Paragraph Table (7):

TABLE 3	I	II
Hydro Para 19.sup.(6) 51.2 47.7 Halpasol .TM. 190/240.sup.(7) 10.2 9.5 Berol .TM. 26.sup.(4) 3.1 2.9 Berol .TM. 269.sup.(8) 5.1 4.8 Berol .TM. 724.sup.(1) 4.4 4.1 Monoethanolamine 1.0 1.0 75.0% 70.0% Technical grade 30.0% <u>phenmedipham</u> , 96% Technical grade 25.0% metamitron, 98% % of <u>phenmedipham</u> in 28.8% composition % of metamitron in 24.5% composition pH (in a 1:10 dilution about 3 about 3 with water)		
Acidic phosphoric acid ester (Berol Kemi) .sup.(4) Ethoxylated nonyphenol (4 ethylene oxide units per molecule) (Berol Kemi) .sup.(6) Solvent refined paraffinic mineral oil (Norsk Hydro) (4% aromatics, viscosity 19.7 cSt at 40.degree. C.) .sup.(7) Paraffin hydrocarbon, <0.1% of aromatic hydrocarbon, boiling point 190-240.degree. C., flash point >70.degree. C. (Haltermann) .sup.(8) Ethoxylated dinonylphenyl (9 ethylene oxide units per molecule) (Berol Kemi)		